Dkt. 02023

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Group Art Unit: 1742

TIMOTHY WARNER Examiner: J.A. Morillo

Serial No.: 10/066,788

Filed: February 6, 2002

For: MANUFACTURING PROCESS FOR A HIGH STRENGTH WORK HARDENED PRODUCT MADE OF AlZnMgCu ALLOY

SUPPLEMENTAL DECLARATION UNDER 37 CFR 1.132

Honorable Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

I, Timothy Warner, do hereby declare as follows:

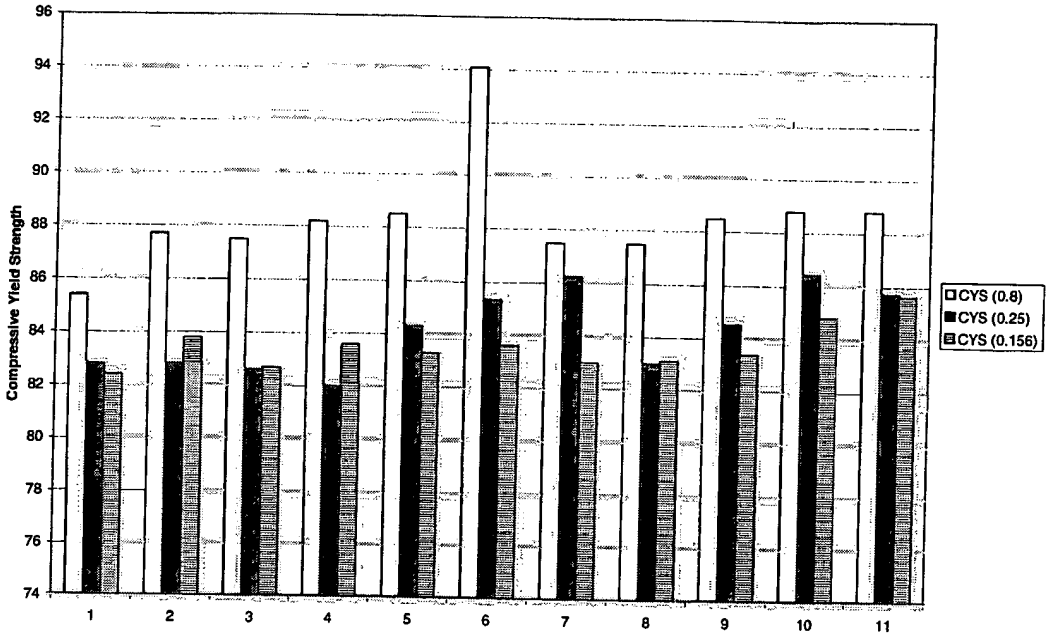
I hold a Ph.D. degree in Metallurgy from the University of Cambridge (UK), obtained in 1989. Since then, I have worked in the aluminum industry more than 15 years, specializing in the optimization of aluminum alloy composition and transformation.

I am the named inventor of the above-identified patent application, and I am also familiar with the patent US 4,954,188 (Ponchel).

In my opinion, Ponchel does not teach an optimized compressive yield strength.

Ponchel provides one example (Example 6) with a high compressive yield strength but the value of 94.1 ksi is thought to represent a typographical error or a poor measurement.

The following graph shows compressive yield strength for the samples described by Ponchel in Tables I, II and III, below.



Sorted values	TS(0.8)	YS (0.8)	CYS (0.8)	TS(0.25)	YS (0.25)	CYS (0.25)	TS(0.156)	YS (0.156)	CYS (0.156)
Y1	95,9	90,3	85,4	90,5	83,1	82	90,4	81,7	82,4
Y2	96,7	90,8	87,5	91	83,5	82,6	90,7	82,3	82,7
Y3	96,9	91,2	87,5	91	83,5	82,8	91,2	83,3	83
Y4	97,1	91,4	87,5	91,7	84,3	82,8	92	83,3	83,1
Y5	97,5	92	87,7	92	85	83	92,2	83,8	83,3
Y6	97,8	92,2	88,2	92,2	85,3	84,3	92,3	84,2	83,4
Y7	98	92,2	88,5	92,6	85,4	84,5	92,4	84,3	83,6
Y8	98,4	92,5	88,5	92,9	85,5	85,3	92,8	84,3	83,6
Y9	98,4	92,7	88,8	93,7	86,2	85,7	93	85,3	83,8
Y10	99,9	92,8	88,8	94,1	86,6	86,2	95,1	85,6	84,8
Y11	100,2	93,5	94,1	95,4	87,4	86,4	95,1	86,7	85,6
Dixon test higher value (Y11 - Y9)/(Y11 - Y2)	0,51	0,30	**0,80**	0,39	0,31	0,18	0,48	0,32	0,62
Dixon test lower value (Y3 - Y1) / Y10 - Y1)	0,25	0,36	0,62	0,14	0,11	0,19	0,17	0,41	0,25

These results clearly show that Example 6 does not exhibit a significantly different compressive yield strength for the thicknesses 0.156″ and 0.25″ and it is very unlikely that it would exhibit a compressive yield strength 10% higher than the other samples for the thickness 0.8″.

Moreover, of all the results provided by Ponchel, the value of 94.1 is the only one which is detected as an outlier using the Dixon test for extreme values (the Dixon test is positive with 1% error probability if the value is higher than 0.679).

Unfortunately the value of 94.1 was incorporated in Figure 3 of Ponchel. Even though this is not clearly stated in Ponchel, Figure 3 of Ponchel presents the average values of longitudinal compressive strength for the different samples in Tables I, II and III.

The Table below summarizes the values provided in Ponchel and an average value was calculated.

	Compressive Yield Strength (ksi) from Ponchel			
	Table I	Table II	Table III	Average
Control 1	87.2	88.1	88.7	88.0
Control 2	86.8	88.9	89.4	88.4
1	82.4	82.8	85.4	83.5
2	83.8	82.8	87.7	84.8
3	82.7	82.6	87.5	84.3
4	83.6	82	88.2	84.6
5	83.3	84.3	88.5	85.4
6	83.6	85.3	94.1	87.7
7	83	86.2	87.5	85.6
8	83.1	83	87.5	84.5
9	83.4	84.5	88.5	85.5
10	84.8	86.4	88.8	86.7
11	85.6	85.7	88.8	86.7

The plot of the average values presented below is identical to Figure 3:

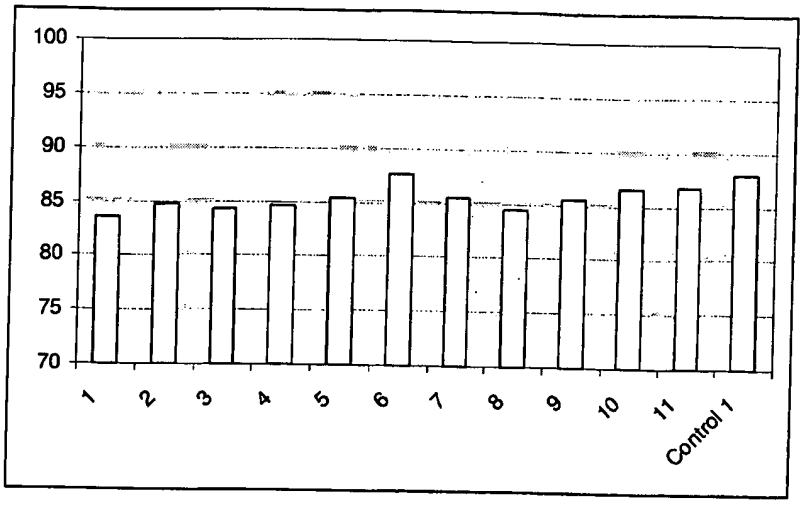
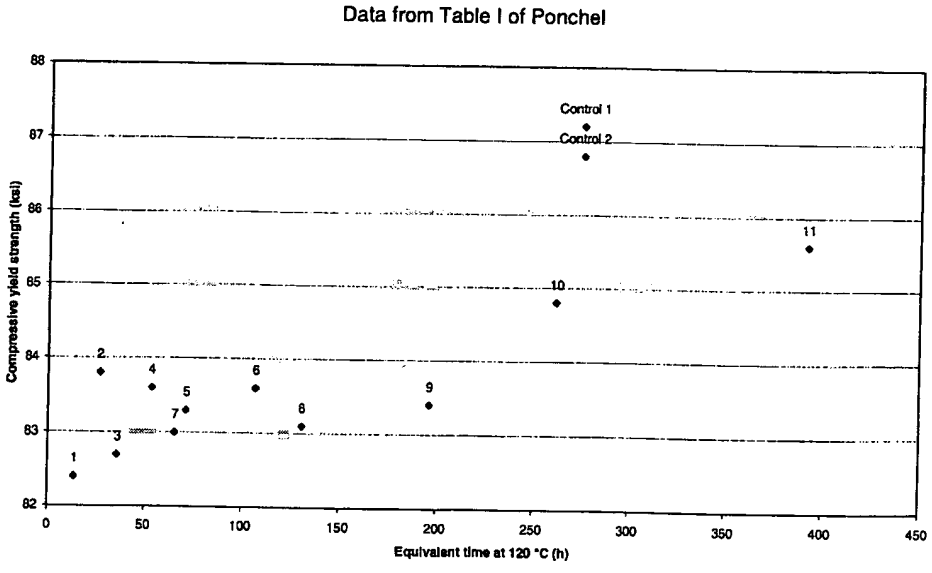
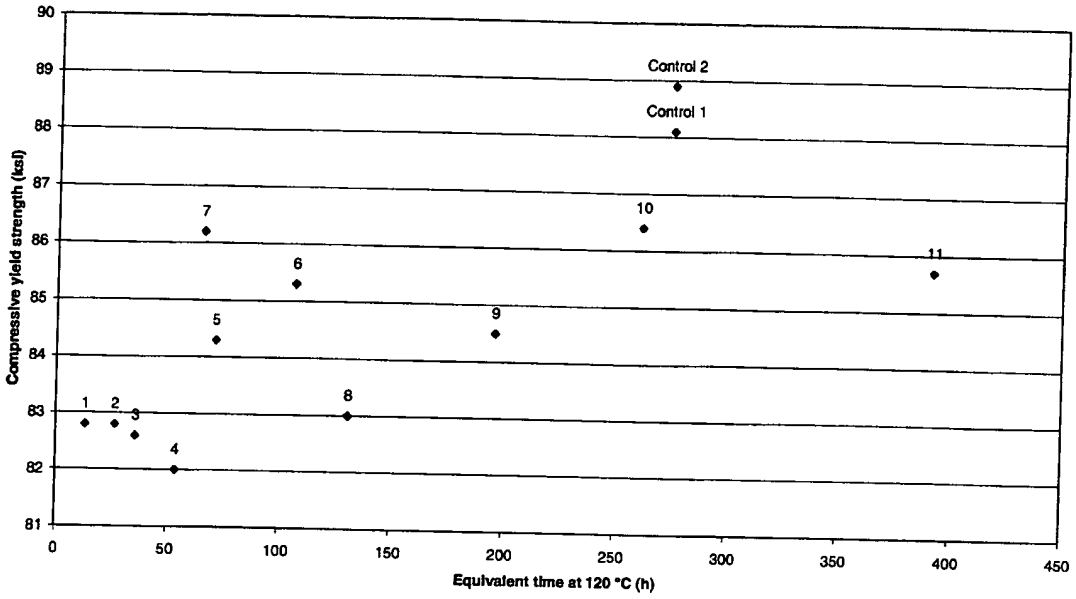


Figure 3 has thus been affected by the error found in Table III and cannot be used to demonstrate that Ponchel teaches a higher compressive yield strength for Example 6 with a teq = 107 than for Ex 11 with a teq = 390.

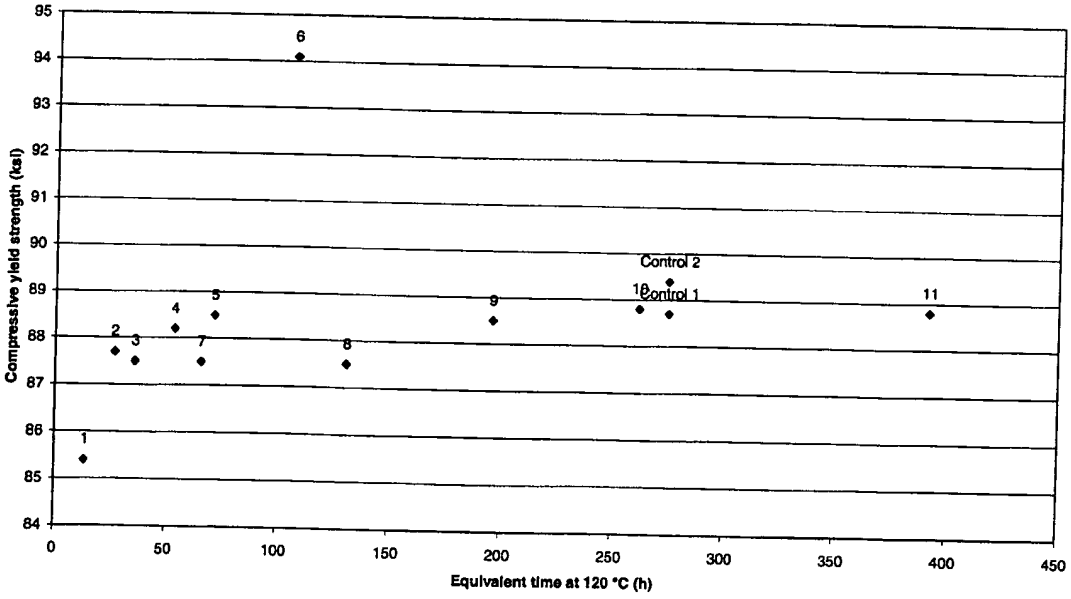
I can further demonstrate this with three plots of the compressive yield strength as a function of equivalent time for the data of Table I, Table II and Table III of Ponchel.



Data from Table II of Ponchel



Data from Table III of Ponchel



I respectfully submit that it is not possible from these data to state that Ponchel teaches that optimum compressive yield strength is obtained for an equivalent time between 100 and 230 hours at 120°C. To the contrary, these graphs suggest a continuous increase in compressive yield stress as a function of equivalent aging time, with some scatter, particularly in the data in table II. Point 6 of table III is clearly separate from the trends observed, another indication that it is either a rogue point or a typographical error.

I further declare that all statements made by me herein are true and all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of the application or any patent issued thereon.

Dec 11th, 2006
Date

Timothy Warner